

WHAT IS CLAIMED IS:

1. A method of purifying used oil comprising the steps of:
placing used oil into a continuous flow apparatus;
contacting the used oil with a base introduced at such a rate as to maintain the base at about 1 weight % to about 10 weight % of the oil composition;
contacting the used oil with a phase transfer catalyst introduced at such a rate as to maintain the phase transfer catalyst at about 2. weight % to about 10 weight % of the oil composition;
heating the composition to a temperature between about 200⁰C and about 275⁰C;
mixing the composition;
separating the resultant mixture using a first distillation at a temperature of from about 200⁰C to about 275⁰C and a pressure of from about 100 torr to about 200 torr; and
purifying the used oil using a second distillation at a temperature of from about 275⁰C to about 300⁰C and a pressure of from about 0.05 torr to about 0.20 torr.

2. The method as recited in Claim 1 additionally comprising the step of:
heating the oil composition obtained from the first distillation to a temperature between about 200⁰C and about 300⁰C; and
mixing the composition after the first distillation but before the second distillation.

3. A method of purifying used oil comprising the steps of:
placing used oil into a continuous flow apparatus;

3 contacting the used oil with a base selected from the group including
4 sodium hydroxide and potassium hydroxide introduced at such a rate as to
5 maintain the base at about 1 weight % to about 10 weight % of the oil
6 composition;

7 contacting the used oil with ethylene glycol introduced at such a rate as to
8 maintain the phase transfer catalyst at about 1 weight % to about 10 weight % of
9 the oil composition;

10 heating the composition to a temperature between about 200°C and about
11 275°C;

12 mixing the composition;

13 separating the resultant mixture using a first distillation at a temperature of
14 from about 200°C to about 275°C and a pressure of from about 100 torr to about
15 200 torr; and

16 purifying the used oil using a second distillation at a temperature of from about
17 275°C to about 350°C and a pressure of from about 0.05 torr to about 0.20 torr.

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